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EXAMINER	
MILORD, MARCEAU	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/649,443	Applicant(s) HIGGINS ET AL.	
	Examiner Marceau Milord	Art Unit 2618	

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 July 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-26* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-26* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Abramov et al (US Patent No 6486832 B1) in view of Braun et al (US Patent No 6980782 B1).

Regarding claims 1-2, Abramov et al discloses an antenna (figs. 1 and 6) for a portable communication device (figs. 3-5; col. 1, line 52-col. 2, line 6), the antenna (12 of figs. 1, 12 of figs. 3-4) includes at least one single memory device (33of fig. 4;col. 2, lines 55-65; col. 3, lines 18-41; col. 3, line 53- col. 4, line 27; col. 4, lines 42-67).

However, Abramov et al does not specifically disclose the features of a memory device programmed with antenna parameter information, the antenna parameter information within the antenna being accessed by the portable communication device.

On the other hand, Braun et al, from the same field of endeavor, discloses an antenna device for transmitting and receiving radio frequency waves, installable in a communication

device includes an antenna structure switchable between antenna configuration states. Each state is distinguished by a set of radiation parameters, such as resonance frequency, input impedance, bandwidth, radiation pattern, gain, polarization, and near-field pattern. A switching device selectively switches the structure between the states. The antenna device includes a first receiver, which receives a first measured operation parameter indicative of quality of transmission of radio frequency waves by the antenna structure, and a second receiver, which receives a second measured operation parameter indicative of quality of reception of radio frequency waves by the structure. The antenna device includes a controller which controls the switching device, and selective switching of the antenna structure between the states, based on the first and second measured operation parameters, to improved transmission and/or reception quality (col. 2, line 38-col. 3, line 4). Furthermore, the control device includes a central processing unit with a memory connected to the measuring device via connections 25, 26, to the switching device via lines 26, 28, and to the switching device 14 via line 27). The CPU is provided with a suitable control algorithm and the memory is used for storing various antennas configuration data for the switching. In addition, the antenna parameters, such as resonance frequency, input impedance, bandwidth, radiation pattern, gain, polarization, and near-field pattern of a small-sized wireless communication device are affected by objects in the proximity of the device (fig. 1;col. 5, lines 20-67; col. 6, lines 5-60; col. 7, lines 337-64). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the technique of Braun to the communication system of Abramov in order to provide an antenna device suited to be used as an integrated part of a radio communication device.

Regarding claim 3, Abramov et al as modified discloses an antenna (figs. 1 and 6) for a portable communication device (figs. 3-5; col. 1, line 52-col. 2, line 6), wherein the at least one single wire memory device can be manipulated by the portable communication device (col. 3, line 20- col. 4, line 10; col. 4, lines19-41).

Regarding claim 4, Abramov et al as modified discloses an antenna (figs. 1 and 6) for a portable communication device (figs. 3-5; col. 1, line 52-col. 2, line 6), wherein the at least one single wire memory device manipulates operation of the portable communication device (col. 3, line 20- col. 4, line 10; col. 4, lines19-41).

Regarding claim 5, Abramov et al as modified discloses an antenna (figs. 1 and 6) for a portable communication device (figs. 3-5; col. 1, line 52-col. 2, line 6), wherein the at least one single wire memory device comprises a 1-wire device (col. 3, lines 53-67; col. 4, lines 17-27).

Regarding claim 6, Abramov et al as modified discloses an antenna (figs. 1 and 6) for a portable communication device (figs. 3-5; col. 1, line 52-col. 2, line 6), wherein the at least one single wire memory device comprises an EEPROM (col. 3, lines 53-67; col. 4, lines 17-27).

Regarding claim 7, Abramov et al as modified discloses an antenna for a portable communication device (figs. 2 and 4), further comprising a single coaxial connector and the at least one single wire device being electrically coupled thereto (figs. 3-5; see USB interface; col. 3, lines 53-67;col. 4, lines 42-67).

Regarding claim 8, Abramov et al discloses an antenna (figs. 1 and 6) (figs. 2 and 4;col. 3, lines 13-43; col. 5,lines 1-41; col. 6, lines 5-15); and a single coaxial antenna connector, the single coaxial antenna connector enabling both RF transport and single wire bus communications (col. 5, lines 18-33).

However, Abramov et al does not specifically disclose the features of a memory device programmed with antenna parameter information, the antenna parameter information within the antenna being accessed through the single coaxial antenna connector.

On the other hand, Braun et al, from the same field of endeavor, discloses an antenna device for transmitting and receiving radio frequency waves, installable in a communication device includes an antenna structure switchable between antenna configuration states. Each state is distinguished by a set of radiation parameters, such as resonance frequency, input impedance, bandwidth, radiation pattern, gain, polarization, and near-field pattern. A switching device selectively switches the structure between the states. The antenna device includes a first receiver, which receives a first measured operation parameter indicative of quality of transmission of radio frequency waves by the antenna structure, and a second receiver, which receives a second measured operation parameter indicative of quality of reception of radio frequency waves by the structure. The antenna device includes a controller which controls the switching device, and selective switching of the antenna structure between the states, based on the first and second measured operation parameters, to improved transmission and/or reception quality (col. 2, line 38-col. 3, line 4). Furthermore, the control device includes a central processing unit with a memory connected to the measuring device via connections 25, 26, to the switching device via lines 26, 28, and to the switching device 14 via line 27). The CPU is provided with a suitable control algorithm and the memory is used for storing various antennas configuration data for the switching. In addition, the antenna parameters, such as resonance frequency, input impedance, bandwidth, radiation pattern, gain, polarization, and near-field pattern of a small-sized wireless communication device are affected by objects in the

proximity of the device (fig. 1;col. 5, lines 20-67; col. 6, lines 5-60; col. 7, lines 337-64). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the technique of Braun to the communication system of Abramov in order to provide an antenna device suited to be used as an integrated part of a radio communication device.

Regarding claim 9, Abramov et al discloses a radio and antenna interface (figs. 1 and 6) system, comprising: a radio including radio electronic circuitry (figs. 3-5) for duplexing RF and baseband signals; an antenna (12 of figs. 1, 12 of figs. 3-4) including antenna electronic circuitry for duplexing RF and baseband signals; a coaxial interface coupling the radio and the antenna, the coaxial interface providing a transport for both the RF and baseband signals; and a memory device embedded in the antenna and coupled to the coaxial interface (col. 2, lines 55-65; col. 3, lines 18-41; col. 3, line 53- col. 4, line 27; col. 4, lines 42-67).

However, Abramov et al does not specifically disclose the features of a memory device embedded in the antenna and coupled to the coaxial interface.

On the other hand, Braun et al, from the same field of endeavor, discloses an antenna device for transmitting and receiving radio frequency waves, installable in a communication device includes an antenna structure switchable between antenna configuration states. Each state is distinguished by a set of radiation parameters, such as resonance frequency, input impedance, bandwidth, radiation pattern, gain, polarization, and near-field pattern. A switching device selectively switches the structure between the states. The antenna device includes a first receiver, which receives a first measured operation parameter indicative of quality of transmission of radio frequency waves by the antenna structure, and a second receiver, which

receives a second measured operation parameter indicative of quality of reception of radio frequency waves by the structure. The antenna device includes a controller which controls the switching device, and selective switching of the antenna structure between the states, based on the first and second measured operation parameters, to improved transmission and/or reception quality (col. 2, line 38-col. 3, line 4). Furthermore, the control device includes a central processing unit with a memory connected to the measuring device via connections 25, 26, to the switching device via lines 26, 28, and to the switching device 14 via line 27). The CPU is provided with a suitable control algorithm and the memory is used for storing various antennas configuration data for the switching. In addition, the antenna parameters, such as resonance frequency, input impedance, bandwidth, radiation pattern, gain, polarization, and near-field pattern of a small-sized wireless communication device are affected by objects in the proximity of the device (fig. 1;col. 5, lines 20-67; col. 6, lines 5-60; col. 7, lines 337-64). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the technique of Braun to the communication system of Abramov in order to provide an antenna device suited to be used as an integrated part of a radio communication device.

Regarding claim 10, Abramov et al as modified discloses a radio and antenna interface (figs. 1 and 6) system, wherein the memory device is a single wire memory device (col. 3, lines 53-67; col. 4, lines 17-27).

Regarding claim 12, Abramov et al discloses an antenna (figs. 1 and 6), comprising: an antenna center (12 of figs. 1, 12 of figs. 3-4) conductor single wire memory device electrically coupled to the antenna center conductor (col. 3, lines 1-9; col. 3, lines 31-41;col. 4, lines 42-67).

However, Abramov et al does not specifically disclose the features of a memory device programmed with antenna parameter information, the antenna parameter information within the antenna being accessed by the portable communication device.

On the other hand, Braun et al, from the same field of endeavor, discloses an antenna device for transmitting and receiving radio frequency waves, installable in a communication device includes an antenna structure switchable between antenna configuration states. Each state is distinguished by a set of radiation parameters, such as resonance frequency, input impedance, bandwidth, radiation pattern, gain, polarization, and near-field pattern. A switching device selectively switches the structure between the states. The antenna device includes a first receiver, which receives a first measured operation parameter indicative of quality of transmission of radio frequency waves by the antenna structure, and a second receiver, which receives a second measured operation parameter indicative of quality of reception of radio frequency waves by the structure. The antenna device includes a controller which controls the switching device, and selective switching of the antenna structure between the states, based on the first and second measured operation parameters, to improved transmission and/or reception quality (col. 2, line 38-col. 3, line 4). Furthermore, the control device includes a central processing unit with a memory connected to the measuring device via connections 25, 26, to the switching device via lines 26, 28, and to the switching device 14 via line 27). The CPU is. provided with a suitable control algorithm and the memory is used for storing various antennas configuration data for the switching. In addition, the antenna parameters, such as resonance frequency, input impedance, bandwidth, radiation pattern, gain, polarization, and near-field pattern of a small-sized wireless communication device are affected by objects in the

proximity of the device (fig. 1;col. 5, lines 20-67; col. 6, lines 5-60; col. 7, lines 337-64). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the technique of Braun to the communication system of Abramov in order to provide an antenna device suited to be used as an integrated part of a radio communication device.

Regarding claim 13, Abramov et al as modified discloses an antenna, wherein the antenna center conductor transports both RF and baseband signals (col. 3, lines 6-56; col. 6, lines 1-17).

Regarding claim 14, Abramov et al as modified discloses an antenna (figs. 1 and 6), wherein the single wire memory device comprises an EEPROM (col. 3, lines 53-67; col. 4, lines 17-27).

Regarding claims 15-18, Abramov et al discloses an antenna interface (figs. 1 and 6) comprising: an antenna center conductor (12 of figs. 1, 12 of figs. 3-4), and a radio center conductor for coupling to the antenna center conductor (col. 3, lines 1-9; col. 3, lines 31-41;col. 4, lines 42-67).

However, Abramov et al does not specifically disclose the features of a memory device programmed with antenna parameter information, the antenna parameter information within the antenna being accessed by the portable communication device.

On the other hand, Braun et al, from the same field of endeavor, discloses an antenna device for transmitting and receiving radio frequency waves, installable in a communication device includes an antenna structure switchable between antenna configuration states. Each

state is distinguished by a set of radiation parameters, such as resonance frequency, input impedance, bandwidth, radiation pattern, gain, polarization, and near-field pattern. A switching device selectively switches the structure between the states. The antenna device includes a first receiver, which receives a first measured operation parameter indicative of quality of transmission of radio frequency waves by the antenna structure, and a second receiver, which receives a second measured operation parameter indicative of quality of reception of radio frequency waves by the structure. The antenna device includes a controller which controls the switching device, and selective switching of the antenna structure between the states, based on the first and second measured operation parameters, to improved transmission and/or reception quality (col. 2, line 38-col. 3, line 4). Furthermore, the control device includes a central processing unit with a memory connected to the measuring device via connections 25, 26, to the switching device via lines 26, 28, and to the switching device 14 via line 27). The CPU is provided with a suitable control algorithm and the memory is used for storing various antennas configuration data for the switching. In addition, the antenna parameters, such as resonance frequency, input impedance, bandwidth, radiation pattern, gain, polarization, and near-field pattern of a small-sized wireless communication device are affected by objects in the proximity of the device (fig. 1;col. 5, lines 20-67; col. 6, lines 5-60; col. 7, lines 337-64). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the technique of Braun to the communication system of Abramov in order to provide an antenna device suited to be used as an integrated part of a radio communication device.

Regarding claim 19, Abramov et al as modified discloses an antenna interface system (figs. 1 and 6), further comprising additional devices within the antenna for controlling predetermined antenna parameters (col. 3, line 53- col. 4, line 27; col. 4, lines 42-67).

Regarding claim 20, Abramov et al as modified discloses an antenna interface system (figs. 1 and 6), wherein the additional devices include a parallel output single wire I/O device (col. 4, lines 14-63).

Regarding claim 21, Abramov et al as modified discloses an antenna interface system (figs. 1 and 6), wherein the parallel output single wire I/O device opens and closes switch contacts to alter the operating frequency of the antenna (col. 5, line 24- col. 6, line 17).

Regarding claims 22-23, Abramov et al discloses an antenna (figs. 1 and 6), comprising: an antenna center conductor (12 of figs. 1, 12 of figs. 3-4), and at least one single wire bus device electrically coupled to the antenna (col. 3, lines 1-9; col. 3, lines 31-41;col. 4, lines 42-67).

However, Abramov et al does not specifically disclose the features of a memory device embedded within the antenna programmed with antenna parameter; and at least one single wire bus device electrically coupled to the antenna center conductor and memory dynamically control operating parameters of the antenna.

On the other hand, Braun et al, from the same field of endeavor, discloses an antenna device for transmitting and receiving radio frequency waves, installable in a communication device includes an antenna structure switchable between antenna configuration states. Each state is distinguished by a set of radiation parameters, such as resonance frequency, input impedance, bandwidth, radiation pattern, gain, polarization, and near-field pattern. A switching

device selectively switches the structure between the states. The antenna device includes a first receiver, which receives a first measured operation parameter indicative of quality of transmission of radio frequency waves by the antenna structure, and a second receiver, which receives a second measured operation parameter indicative of quality of reception of radio frequency waves by the structure. The antenna device includes a controller which controls the switching device, and selective switching of the antenna structure between the states, based on the first and second measured operation parameters, to improved transmission and/or reception quality (col. 2, line 38-col. 3, line 4). Furthermore, the control device includes a central processing unit with a memory connected to the measuring device via connections 25, 26, to the switching device via lines 26, 28, and to the switching device 14 via line 27). The CPU is provided with a suitable control algorithm and the memory is used for storing various antennas configuration data for the switching. In addition, the antenna parameters, such as resonance frequency, input impedance, bandwidth, radiation pattern, gain, polarization, and near-field pattern of a small-sized wireless communication device are affected by objects in the proximity of the device (fig. 1;col. 5, lines 20-67; col. 6, lines 5-60; col. 7, lines 337-64). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the technique of Braun to the communication system of Abramov in order to provide an antenna device suited to be used as an integrated part of a radio communication device.

Regarding claims 24-26, Abramov et al discloses an antenna for coupling to a portable communication device (figs. 1 and 6; figs. 3-5), the antenna (12 of figs. 1, 12 of figs. 3-4) comprising a device for storing antenna parameters, the radio determining whether a correct

antenna has been coupled thereto based on the antenna parameters (col. 2, lines 55-65; col. 3, lines 18-41; col. 3, line 53- col. 4, line 27; col. 4, lines 42-67).

However, Abramov et al does not specifically disclose the features of a memory device for storing antenna parameter information, the radio determining whether a correct antenna that has been coupled based on the antenna parameter information, and the radio providing an error message when an incorrect antenna has been coupled.

On the other hand, Braun et al, from the same field of endeavor, discloses an antenna device for transmitting and receiving radio frequency waves, installable in a communication device includes an antenna structure switchable between antenna configuration states. Each state is distinguished by a set of radiation parameters, such as resonance frequency, input impedance, bandwidth, radiation pattern, gain, polarization, and near-field pattern. A switching device selectively switches the structure between the states. The antenna device includes a first receiver, which receives a first measured operation parameter indicative of quality of transmission of radio frequency waves by the antenna structure, and a second receiver, which receives a second measured operation parameter indicative of quality of reception of radio frequency waves by the structure. The antenna device includes a controller which controls the switching device, and selective switching of the antenna structure between the states, based on the first and second measured operation parameters, to improved transmission and/or reception quality (col. 2, line 38-col. 3, line 4). Furthermore, the control device includes a central processing unit with a memory connected to the measuring device via connections 25, 26, to the switching device via lines 26, 28, and to the switching device 14 via line 27). The CPU is provided with a suitable control algorithm and the memory is used for storing various antennas

configuration data for the switching. In addition, the antenna parameters, such as resonance frequency, input impedance, bandwidth, radiation pattern, gain, polarization, and near-field pattern of a small-sized wireless communication device are affected by objects in the proximity of the device (fig. 1;col. 5, lines 20-67; col. 6, lines 5-60; col. 7, lines 337-64). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the technique of Braun to the communication system of Abramov in order to provide an antenna device suited to be used as an integrated part of a radio communication device.

Response to Arguments

3. Applicant's arguments with respect to claims 1-26 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

4. THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marceau Milord whose telephone number is 571-272-7853. The examiner can normally be reached on Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew D. Anderson can be reached on 571-272-4177. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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